EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	318	((ion beam) and (ion adj2 (implanter or implantation))).clm.	US-PGPUB	ADJ	ON	2007/06/13 09:58
L2	6	l1 and ((detector with ((ion or beam) adj current))).clm.	US-PGPUB	ADJ	ON	2007/06/13 10:07
L3	1138	(250/492.21).CCLS.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/06/13 10:06
L4	17	l1 and ((detector with ((ion or beam) adj current)))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2007/06/13 10:11
L5	68	l3 and ((detector with ((ion or beam) adj current)))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2007/06/13 10:12
L6	11527	(ion beam) and (ion adj2 (implanter or implantation))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2007/06/13 10:12
L7	129	L6 and (detector with ((ion or beam) adj current))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2007/06/13 10:12
L8	67	L7 and pressure	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2007/06/13 10:12

EAST Search History

L9	33	5 not L8	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2007/06/13 10:12
L10	2	9 and pressure	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2007/06/13 10:14
L11	17	9 and vacuum	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2007/06/13 10:14
S1	1	"09586492".rlan. or ("09".src. and "586492".ap.)	US-PGPUB; USPAT; USOCR; DERWENT	OR	ON	2007/06/12 11:25
S2	13	US-5814823-$.DID. OR US-5998798-$.DID. OR US-4283631-$.DID. OR US-4421988-$.DID. OR US-4449051-$.DID. OR US-4504194-$.DID. OR US-4807994-$.DID. OR US-4922106-$.DID. OR US-5475618-$.DID. OR US-5572038-$.DID. OR US-5711843-$.DID. OR US-5760409-$.DID. OR US-6101971-$.DID. OR EP-0457321-$.DID.	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/12 10:17
S3	2	("5319212").PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/06/12 09:13
S4	4	(("4587433") or ("4751393")).PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/06/12 10:18

EAST Search History

S5	7	("4118630" | "4234797" | "4357536" | "4539217" | "4717829" | "4849641" | "5180918").PN.	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/12 10:29
S6	13	("4283631" | "4421988" | "4449051" | "4504194" | "4587433" | "4751393" | "4807994" | "4922106" | "5475618" | "5572038" | "5711843" | "5760409" | "6101971").PN.	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/12 10:33
S7	11	S6 not S4	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/12 10:34
S8	13	US-5814823-$.DID. OR US-5998798-$.DID. OR US-4283631-$.DID. OR US-4421988-$.DID. OR US-4449051-$.DID. OR US-4504194-$.DID. OR US-4807994-$.DID. OR US-4922106-$.DID. OR US-5475618-$.DID. OR US-5572038-$.DID. OR US-5711843-$.DID. OR US-5760409-$.DID. OR US-6101971-$.DID. OR EP-0457321-$.DID.	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/12 10:35
S9	2	S6 not S8	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/12 10:35
S10	11527	(ion beam) and (ion adj2 (implanter or implantation))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2007/06/13 09:57
S11	129	S10 and (detector with ((ion or beam) adj current))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2007/06/13 10:01
S12	67	S11 and pressure	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2007/06/12 11:31

EAST Search History

S13	15	("4587433" | "4717829" | "4751393" | "4929840" | "5136171" | "5572038" | "5631461").PN. OR ("5814823").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/12 17:40
S14	17	("4118630" | "4234797" | "4357536" | "4539217" | "4717829" | "4849641" | "5180918").PN. OR ("5319212").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/12 17:47
S15	32	("4539217").URPN.	USPAT	OR	ON	2007/06/12 17:54

EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
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L2	11527	(ion beam) and (ion adj2 (implanter or implantation))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2007/06/13 15:08
L3	148	1 and L2	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/13 15:08
L4	12	l3 and (detector with ((ion or beam) adj current))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2007/06/13 15:09
L5	8	l4 and pressure	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2007/06/13 15:09

586492 (09) 6323497 November 27, 2001

UNITED STATES PATENT AND TRADEMARK OFFICE GRANTED PATENT

6323497

November 27, 2001

Method and apparatus for controlling ion implantation during vacuum fluctuation

REISSUE: June 24, 2003 - Reissue Application filed Ex. Gp.: 2881; Re. S.N. 10/602,795 (O.G. November 11, 2003)

INVENTOR: Walther, Steven R. - Andover, Massachusetts, United States (US)

APPL-NO: 586492 (09)

FILED-DATE: June 2, 2000

GRANTED-DATE: November 27, 2001

ASSIGNEE-PRE-ISSUE: June 2, 2000 - ASSIGNMENT OF ASSIGNORS INTEREST (SEE DOCUMENT FOR DETAILS)., VARIAN SEMICONDUCTOR EQUIPMENT ASSOCIATES, INC. 35 DORY ROADGLOUCESTER, MASSACHUSETTS, 01930, Reel and Frame Number: 010870/0574

ASSIGNEE-AT-ISSUE: Varian Semiconductor Equipment Assoc., Gloucester, Massachusetts, United States (US), United States company or corporation (02)

LEGAL-REP: Wolf, Greenfield & Sacks

PUB-TYPE: November 27, 2001 - Utility Patent having no previously published pre-grant publication (B1)

PUB-COUNTRY: United States (US)

US-MAIN-CL: 250#492.21

US-ADDL-CL: 250#492.1

CL: 250

SEARCH-FLD: 118#723, 438#14, 438#15, 116#208, 250#492.21, 364#550, 156#345

LexisNexis CourtLink

Welcome Diane Jackson!

Patent Search 6323497 6/13/2007

No cases found.

Return to Search

(Charges for search still apply)

Query/Command : prt ful legalall max

1 / 1 FAMPAT - ©QUESTEL-ORBIT - image

FAN - 20042800404444

PN - US6323497 B1 20011127 [US6323497]
STG: U.S. Patent (no pre-grant pub.) after Jan. 2, 2001
AP : 2000US-0586492 20000602
WO200195363 A1 20011213 [WO200195363]
STG: Publ. Of int. Appl. With int. Search rep
AP : 2001WO-US13008 20010423
TW493211 B 20020701 [TW-493211]
STG: Patent
AP : 2001TW-0110853 20010507
EP1287544 A1 20030305 [EP1287544]
STG: Public. Of applic. With search report
AP : 2001EP-0928753 20010423
CN1432187 A 20030723 [CN1432187]
STG: Unexamined application
AP : 2001CN-0810260 20010423
JP2004513471 T 20040430 [JP2004513471]
STG: Unexam. Pat. Appl. On foreign appl.
AP : 2002JP-0502808 20010423
EP1287544 B1 20060222 [EP1287544]
STG: Patent
DE60117374 D1 20060427 [DE60117374]
STG: Granted EP number in bulletin
AP : 2001DE-6017374 20010423
CN1307678 C 20070328 [CN1307678C]
STG: Granted patent

TI - METHOD AND APPARATUS FOR CONTROLLING ION IMPLANTATION DURING VACUUM FLUCTUATION

PA - VARIAN SEMICONDUCTOR EQUIPMENT

PA0 - Varian Semiconductor Equipment Associates Inc.; 35 Dory Road; Gloucester, MA 01930 (US)

IN - WALTHER STEVEN R

PR - 2000US-0586492 20000602; 2001WO-US13008 20010423

IC - G21G-005/10
H01J-037/02
H01J-037/18
H01J-037/30
H01J-037/304
H01J-037/317
H01L-021/00
H01L-021/02
H01L-021/265

ICAA - H01J-037/304 [2006-01 A - I R M EP]; H01J-037/317 [2006-01 A - I R M EP]

ICCA - H01J-037/30 [2006 C - I R M EP]; H01J-037/317 [2006 C - I R M EP]

EC - H01J-037/304

H01J-037/317A

ICO - T01J-237/317A1

PCL - ORIGINAL (O) : 250492210; CROSS-REFERENCE (X) : 250492100

DS - (EP1287544)
DE FR GB IT

DS - (WO200195363)
CN IL JP KR European patent (AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR)

CT - (EP1287544)
Cited in the search report
See references of WO 0195363A1

CT - (US6323497)
US4283631; US4421988; US4449051; US4504194; US4587433; US4751393; US4807994; US4922106; US5475618; US5572038; US5711843; US5760409; US6101971

CT - (WO200195363)
Cited in the search report
US5814823(A)(Cat. X);US5319212(A)(Cat. X);WO0007030(A)(Cat. X);EP457321(A)(Cat. Y);EP964426(A)(Cat. Y)

AB - (US6323497)
A method and apparatus for controlling implantation during vacuum fluctuations along a beam line. Vacuum fluctuations may be detected based on a detected beam current and/or may be compensated for without measuring pressure in an implantation chamber. A reference level for an ion beam current can determined and a difference between the reference value and the measured ion beam current can be used to control parameters of the ion implantation process, such as a wafer scan rate. The difference value can also be scaled to account for two types of charge exchanging collisions that result in a decrease in detected beam current. A first type of collision, a non-line of sight collision, causes a decrease in detected beam current, and also a decrease in the total dose delivered to a semiconductor wafer. A second type of collision, a line of sight collision, causes a decrease in detected beam current, but does not affect a total dose delivered to the wafer. Scaling of the difference can therefore be used to adjust a wafer scan rate that accounts for non-line of sight collisions.

OBJ - (US6323497)
The invention relates to controlling ion implantation during vacuum fluctuation. In particular, the invention relates to controlling an ion beam implantation process to compensate for vacuum fluctuation based on a measured beam current and not a measured pressure.
The invention provides methods and apparatus for controlling an ion beam implantation process in the presence of vacuum fluctuation along the beam line. In one aspect of the invention, vacuum fluctuations can be detected based on a detected ion beam current, and not a detected pressure.
Thus, the beam current difference DELTA I is a function of both the line of sight collisions and non-line of sight collisions.

ADB -
(US6323497)
In addition, it is not necessary to use all three detectors 41-43.
These collisions can cause ions in the beam to experience a charge change.

The charge exchanging collisions that result when the vacuum level along the beam line drops can cause problems because the detectors used to determine and control the ion beam current (and also the total dose of the wafer) during implantation typically only detect charged particles, but not neutral particles. Since the typical ion beam current detector, such as a Faraday cup, is not capable of detecting the neutral particles, neutral particles that should be counted as contributing to the wafer dose are not detected.

ICLM - (US6323497)
1. An ion implantation system comprising:
means for generating an ion beam;
means for determining an ion beam current reference level;
means for measuring an ion beam current during implantation; and
means for adjusting an ion implantation parameter to compensate for vacuum fluctuations during implantation based on the reference level and the measured ion beam current, and not based on a detected pressure.
2. An ion implantation system comprising:
a beam generator that generates an energetic ion beam and directs the beam toward a semiconductor wafer;
a detector that detects an ion beam current;
a wafer drive that moves the semiconductor wafer in a direction transverse to the ion beam path; and
a controller that receives signals from the detector representative of a detected ion beam current, detects a vacuum fluctuation based on the detected ion beam current, and controls the wafer drive to adjust a wafer scan rate to compensate for the vacuum fluctuation during implantation.

UP - 2003-21

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1 / 5 LGST - ©EPO

PN - DE60117374 D1 20060427 [DE60117374]

AP - DE60117374 20010423 [2001DE-6017374]

ACT - 20070125 DE/8332-A [-]
NO LEGAL EFFECT FOR DE
WIRKUNG FUER DE NICHT EINGETRETEN

UP - 2007-04

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2 / 5 LGST - ©EPO

PN - TW493211 B 20020701 [TW-493211]

AP - TW90110853 20010507 [2001TW-0110853]

ACT - 20021112 TW/GD4A-A [+]
ISSUE OF PATENT CERTIFICATE FOR GRANTED INVENTION PATENT
ISSUE OF PATENT CERTIFICATE FOR GRANTED INVENTION PATENT

UP - 2004-28

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3 / 5 LGST - ©EPO

PN - US6323497 B1 20011127 [US6323497]

AP - US58649200 20000602 [2000US-0586492]

ACT - 20000602 US/AS-A
ASSIGNMENT
OWNER: VARIAN SEMICONDUCTOR EQUIPMENT ASSOCIATES, INC.
35; EFFECTIVE DATE: 20000530
ASSIGNMENT OF ASSIGNORS INTEREST;ASSIGNOR:WALTHER,
STEVEN R.;REEL/FRAME:010870/0574

20031111 US/RF-A
REISSUE APPLICATION FILED
EFFECTIVE DATE: 20030624

UP - 2004-29

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4 / 5 LGST - ©EPO

PN - WO200195363 A1 20011213 [WO200195363]

AP - WOUS0113008 20010423 [2001WO-US13008]

ACT - 20011213 WO/AK [+]
DESIGNATED STATES CITED IN A PUBLISHED APPLICATION WITH
SEARCH REPORT
CN IL JP KR

20011213 WO/AL [+]
DESIGNATED COUNTRIES FOR REGIONAL PATENTS CITED IN A
PUBLISHED APPLICATION WITH SEARCH REPORT
AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR

20020206 WO/121
EP: THE EPO HAS BEEN INFORMED BY WIPO THAT EP WAS
DESIGNATED IN THIS APPLICATION

20020221 WO/DFPE
REQUEST FOR PRELIMINARY EXAMINATION FILED PRIOR TO
EXPIRATION OF 19TH MONTH FROM PRIORITY DATE

20021127 WO/WWE [+]
WIPO INFORMATION: ENTRY INTO NATIONAL PHASE
< 018102603 >

20021130 WO/WWE [+]
WIPO INFORMATION: ENTRY INTO NATIONAL PHASE
< 1020027016409 >

20021202 WO/ENP
ENTRY INTO THE NATIONAL PHASE IN:
JP 2002 502808A [2002JP-0502808]

20030123 WO/WWP [+]
WIPO INORMATION: PUBLISHED IN NATIONAL OFFICE
< 1020027016409 >

UP - 2006-42

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5 / 5 LGST - ©EPO

PN - EP1287544 A1 20030305 [EP1287544]
EP1287544 B1 20060222 [EP1287544]

AP - EP01928753 20010423 [2001EP-0928753]

ACT -

20030305 EP/17P-A [+]
REQUEST FOR EXAMINATION FILED
PRUEFUNGSANTRAG GESTELLT
EFFECTIVE DATE: 20021129

20030305 EP/AK-A [+]
DESIGNATED CONTRACTING STATES:
BENANNTE VERTRAGSSTAATEN
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR

20040512 EP/RBV-A [+]
DESIGNATED CONTRACTING STATES (CORRECTION):
BENANNTE VERTRAGSSTAATEN (KORR.)
DE FR GB IT

20050209 EP/17Q-A
FIRST EXAMINATION REPORT
ERSTER PRUEFUNGSBESCHEID
EFFECTIVE DATE: 20041223

20060222 EP/AK-A [+]
DESIGNATED CONTRACTING STATES:
BENANNTE VERTRAGSSTAATEN
DE FR GB IT

20060222 EP/REG-A; GB/FG4D [+]
GB: EUROPEAN PATENT GRANTED
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20060427 EP/REF-A
CORRESPONDS TO:
ENTSPRICHT
(DE 60117374 20060427 [DE60117374])

20070131 EP/26N-A [+]
NO OPPOSITION FILED
KEIN EINSPRUCH EINGELEGT
EFFECTIVE DATE: 20061123

20070404 EP/25-A [-]
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INFORM. FROM NAT. OFFICE TO EPO
<DE>
EFFECTIVE DATE: 20060523

20070420 EP/EN-A [-]
FR: TRANSLATION NOT FILED
FR: TRADUCTION N'A PAS ETE REMISE

UP - 2007-19

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1 / 1 CRXX - ©CLAIMS/RRX

AN - 3611752

PN - 6,323,497 A 20011127 [US6323497]

PA - Varian Semiconductor Equipment Associates Inc

PT - E (Electrical)

ACT - 20030624 REISSUE REQUESTED
ISSUE DATE OF O.G.: 20031111
REISSUE REQUEST NUMBER: 10/602795
EXAMINATION GROUP RESPONSIBLE FOR REISSUEPROCESS: 2881

Reissue Patent Number:

UP - 2003-46

UACT - 2003-11-11

Search statement 2

Back

Extended Family Search Results

US6323497/PN Results : 7

PATENT FAMILY

#	Patent No.	Kind	Date	Applic.No.	Date
1)	CN1432187	A	20030723	2001CN-0810260	20010423
	CN1307678C	C	20070328		
2)	DE60117374	D1	20060427	2001DE-6017374	20010423
3)	EP1287544	A1	20030305	2001EP-0928753	20010423
	EP1287544	B1	20060222		
4)	JP2004513471	T	20040430	2002JP-0502808	20010423
5)	TW-493211	B	20020701	2001TW-0110853	20010507
6)	US6323497	B1	20011127	2000US-0586492	20000602
7)	WO200195363	A1	20011213	2001WO-US13008	20010423

Priority :

2000US-0586492	20000602
2001WO-US13008	20010423

---

1 / 7 PLUSPAT - ©QUESTEL-ORBIT

PN - CN1432187 A 20030723 [CN1432187]
STG - (A) Unexamined application
TI - (A) Method and appts. for controlling ion implantation during vacuum fluctuation
PA - (A) VARIAN SEMICONDUCTOR EQUIPMENT (US)
IN - (A) WALTHER STEVEN R (US)
IC - (A) H01J-037/18 H01J-037/317
PN2 - CN1307678 C 20070328 [CN1307678C]
STG2 - (C) Granted patent
IC2 - (C) H01J-037/02 H01J-037/18 H01J-037/30 H01J-037/304 H01J-037/317 H01L-021/02 H01L-021/265
AP - CN01810260 20010423 [2001CN-0810260]
PR - US58649200 20000602 [2000US-0586492]
ICAA - H01J-037/18 [2006-01 A F I B H CN]; H01J-037/304 [2006-01 A - I R M EP]; H01J-037/317 [2006-01 A - I R M EP]; H01L-021/265 [2006-01 A L I R M JP]
ICCA - H01J-037/02 [2006 C F I B H CN]; H01J-037/30 [2006 C - I R M EP]; H01J-037/317 [2006 C - I R M EP]; H01L-021/02 [2006 C L I R M JP]
UP - 2005-08

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2 / 7 PLUSPAT - ©QUESTEL-ORBIT

PN - DE60117374 D1 20060427 [DE60117374]
STG - (D1) Granted EP number in bulletin
OTI - (D1) VERFAHREN UND VORRICHTUNG ZUR STEUERUNG DER IONENIMPLANTIERUNG BEI VAKUUMSCHWANKUNGEN
PA - (D1) VARIAN SEMICONDUCTOR EQUIPMENT (US)
IN - (D1) WALTHER R (US)
IC - (D1) H01J-037/02 H01J-037/18 H01J-037/30 H01J-037/304 H01J-037/317
AP - DE60117374 20010423 [2001DE-6017374]
PR - WOUS0113008 20010423 [2001WO-US13008]
US58649200 20000602 [2000US-0586492]
ICAA - H01J-037/18 [2006-01 A F I B H EP]; H01J-037/304 [2006-01 A - I R M EP]; H01J-037/317 [2006-01 A L I B H EP]
ICCA - H01J-037/02 [2006 C F I B H EP]; H01J-037/30 [2006 C - I R M EP]; H01J-037/317 [2006 C L I B H EP]
EC - H01J-037/304
H01J-037/317A
ICO - T01J-237/317A1
UP - 2006-17

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1 / 1 LEGALI - ©EPO

PN - DE60117374 D1 20060427 [DE60117374]
AP - DE60117374 20010423 [2001DE-6017374]
ACT - 20070125 DE/8332-A [-]
NO LEGAL EFFECT FOR DE
WIRKUNG FUER DE NICHT EINGETRETEN
UP - 2007-04

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3 / 7 PLUSPAT - ©QUESTEL-ORBIT

PN - EP1287544 A1 20030305 [EP1287544]
STG - (A1) Public. Of applic. With search report
TI - (A1) METHOD AND APPARATUS FOR CONTROLLING ION IMPLANTATION DURING VACUUM FLUCTUATION
OTI - (A1) VERFAHREN UND VORRICHTUNG ZUR STEUERUNG DER IONENIMPLANTIERUNG BEI VAKUUMSCHWANKUNGEN
(A1) PROCEDE ET DISPOSITIF DE COMMANDE D'IMPLANTATION IONIQUE PENDANT DES FLUCTUATIONS DE VIDE
PA - (A1) VARIAN SEMICONDUCTOR EQUIPMENT (US)
PA0 - Varian Semiconductor Equipment Associates Inc.; 35 Dory Road; Gloucester, MA 01930 (US)
IN - (A1) WALTHER STEVEN R (US)
IC - (A1) H01J-037/18 H01J-037/317
PN2 - EP1287544 B1 20060222 [EP1287544]

STG2 - (B1) Patent
TI2 - (B1) METHOD AND APPARATUS FOR CONTROLLING ION IMPLANTATION DURING VACUUM FLUCTUATION
OTI2 - (B1) VERFAHREN UND VORRICHTUNG ZUR STEUERUNG DER IONENIMPLANTIERUNG BEI VAKUUMSCHWANKUNGEN
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IN2 - (B1) WALTHER STEVEN R (US)
IC2 - (B1) H01J-037/02 H01J-037/18 H01J-037/30 H01J-037/304 H01J-037/317
LA - ENGLISH (ENG)
AP - EP01928753 20010423 [2001EP-0928753]
PR - WOUS0113008 20010423 [2001WO-US13008]
US58649200 20000602 [2000US-0586492]
ICAA - H01J-037/304 [2006-01 A - I R M EP]; H01J-037/317 [2006-01 A - I R M EP]
ICCA - H01J-037/30 [2006 C - I R M EP]; H01J-037/317 [2006 C - I R M EP]
DS - DE FR GB IT
UP - 2003-10

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1 / 1 LEGALI - ©EPO

PN - EP1287544 A1 20030305 [EP1287544]EP1287544 B1 20060222 [EP1287544]
AP - EP01928753 20010423 [2001EP-0928753]
ACT -

20030305 EP/17P-A [+]
REQUEST FOR EXAMINATION FILED
PRUEFUNGSANTRAG GESTELLT
EFFECTIVE DATE: 20021129

20030305 EP/AK-A [+]
DESIGNATED CONTRACTING STATES:
BENANNTE VERTRAGSSTAATEN
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR

20040512 EP/RBV-A [+]
DESIGNATED CONTRACTING STATES (CORRECTION):
BENANNTE VERTRAGSSTAATEN (KORR.)
DE FR GB IT

20050209 EP/17Q-A
FIRST EXAMINATION REPORT
ERSTER PRUEFUNGSBESCHEID
EFFECTIVE DATE: 20041223

20060222 EP/AK-A [+]
DESIGNATED CONTRACTING STATES:
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DE FR GB IT

20060222 EP/REG-A; GB/FG4D [+]
GB: EUROPEAN PATENT GRANTED
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20060427 EP/REF-A
CORRESPONDS TO:
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(DE 60117374 20060427 [DE60117374])

20070131 EP/26N-A [+]
NO OPPOSITION FILED
KEIN EINSPRUCH EINGELEGT
EFFECTIVE DATE: 20061123

20070404 EP/25-A [-]
LAPSED IN A CONTRACTING STATE ANNOUNCED VIA POSTGRANT INFORM. FROM NAT. OFFICE TO EPO
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EFFECTIVE DATE: 20060523

20070420 EP/EN-A [-]
FR: TRANSLATION NOT FILED
FR: TRADUCTION N'A PAS ETE REMISE

UP - 2007-19

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PN - JP2004513471 T 20040430 [JP2004513471]
STG - (T) Unexam. Pat. Appl. On foreign appl.
IC - (T) H01J-037/317 H01L-021/265
AP - JP2002502808T 20010423 [2002JP-0502808]
PR - US58649200 20000602 [2000US-0586492]
WOUS0113008 20010423 [2001WO-US13008]
ICAA - H01J-037/304 [2006-01 A - I R M EP]; H01J-037/317 [2006-01 A - I R M EP]
ICCA - H01J-037/30 [2006 C - I R M EP]; H01J-037/317 [2006 C - I R M EP]
UP - 2004-22

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PN - TW493211 B 20020701 [TW-493211]
STG - (B) Patent
TI - (B) Method and apparatus for controlling ion implantation during vacuum fluctuation
PA - (B) VARIAN SEMICONDUCTOR EQUIPMENT (US)

IN - (B) WALTHER STEVEN R (US)
IC - (B) H01L-021/00 H01L-021/265
AP - TW90110853 20010507 [2001TW-0110853]
PR - US58649200 20000602 [2000US-0586492]
ICAA - H01J-037/304 [2006-01 A - I R M EP]; H01J-037/317 [2006-01 A - I R M EP]
ICCA - H01J-037/30 [2006 C - I R M EP]; H01J-037/317 [2006 C - I R M EP]
UP - 2003-21

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PN - TW493211 B 20020701 [TW-493211]
AP - TW90110853 20010507 [2001TW-0110853]
ACT - 20021112 TW/GD4A-A [+]
ISSUE OF PATENT CERTIFICATE FOR GRANTED INVENTION PATENT
ISSUE OF PATENT CERTIFICATE FOR GRANTED INVENTION PATENT
UP - 2004-28

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PN - US6323497 B1 20011127 [US6323497]
STG - (B1) U.S. Patent (no pre-grant pub.) after Jan. 2, 2001
TI - (B1) Method and apparatus for controlling ion implantation during vacuum fluctuation
PA - (B1) VARIAN SEMICONDUCTOR EQUIPMENT (US)
PA0 - Varian Semiconductor Equipment Assoc., Gloucester MA [US]
IN - (B1) WALTHER STEVEN R (US)
IC - (B1) G21G-005/10
AP - US58649200 20000602 [2000US-0586492]
PR - US58649200 20000602 [2000US-0586492]
ICAA - H01J-037/304 [2006-01 A - I R M EP]; H01J-037/317 [2006-01 A - I R M EP]
ICCA - H01J-037/30 [2006 C - I R M EP]; H01J-037/317 [2006 C - I R M EP]
EC - H01J-037/304
H01J-037/317A
PCL - ORIGINAL (O) : 250492210; CROSS-REFERENCE (X) : 250492100
DT - Basic
UP - 2001-49

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PN - US6323497 B1 20011127 [US6323497]
AP - US58649200 20000602 [2000US-0586492]
ACT - 20000602 US/AS-A
ASSIGNMENT
OWNER: VARIAN SEMICONDUCTOR EQUIPMENT ASSOCIATES, INC.
35; EFFECTIVE DATE: 20000530

ASSIGNMENT OF ASSIGNORS INTEREST;ASSIGNOR:WALTHER, STEVEN R.;REEL/FRAME:010870/0574

20031111 US/RF-A
REISSUE APPLICATION FILED
EFFECTIVE DATE: 20030624

UP - 2004-29

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PN - WO200195363 A1 20011213 [WO200195363]
STG - (A1) Publ. Of int. Appl. With int. Search rep
TI - (A1) METHOD AND APPARATUS FOR CONTROLLING ION IMPLANTATION DURING VACUUM FLUCTUATION
OTI - (A1) PROCEDE ET DISPOSITIF DE COMMANDE D'IMPLANTATION IONIQUE PENDANT DES FLUCTUATIONS DE VIDE
PA - (A1) VARIAN SEMICONDUCTOR EQUIPMENT (US)
PA0 - VARIAN SEMICONDUCTOR EQUIPMENT ASSOCIATES, INC.; 35 Dory Road, Gloucester, MA 01930 (US)
IN - (A1) WALTHER STEVEN R
IC - (A1) H01J-037/18 H01J-037/317
LA - ENGLISH (ENG)
AP - WOUS0113008 20010423 [2001WO-US13008]
PR - US58649200 20000602 [2000US-0586492]
ICAA - H01J-037/304 [2006-01 A - I R M EP]; H01J-037/317 [2006-01 A - I R M EP]
ICCA - H01J-037/30 [2006 C - I R M EP]; H01J-037/317 [2006 C - I R M EP]
EC - H01J-037/304
H01J-037/317A
DS - CN; IL; JP; KR; European patent (AT; BE; CH; CY; DE; DK; ES; FI; FR; GB; GR; IE; IT; LU; MC; NL; PT; SE; TR)
DT - Corresponding document
UP - 2002-02

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PN - WO200195363 A1 20011213 [WO200195363]
AP - WOUS0113008 20010423 [2001WO-US13008]
ACT -
20011213 WO/AK [+]
DESIGNATED STATES CITED IN A PUBLISHED APPLICATION WITH SEARCH REPORT
CN IL JP KR

20011213 WO/AL [+]
DESIGNATED COUNTRIES FOR REGIONAL PATENTS CITED IN A PUBLISHED APPLICATION WITH SEARCH REPORT
AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR

20020206 WO/121
EP: THE EPO HAS BEEN INFORMED BY WIPO THAT EP WAS DESIGNATED IN THIS APPLICATION

20020221 WO/DFPE
REQUEST FOR PRELIMINARY EXAMINATION FILED PRIOR TO EXPIRATION OF 19TH MONTH FROM PRIORITY DATE

20021127 WO/WWE [+]
WIPO INFORMATION: ENTRY INTO NATIONAL PHASE
< 018102603 >

20021130 WO/WWE [+]
WIPO INFORMATION: ENTRY INTO NATIONAL PHASE
< 1020027016409 >

20021202 WO/ENP
ENTRY INTO THE NATIONAL PHASE IN:
JP 2002 502808A [2002JP-0502808]

20030123 WO/WWP [+]
WIPO INORMATION: PUBLISHED IN NATIONAL OFFICE
< 1020027016409 >

UP - 2006-42

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- TITLE 38. VETERANS' BENEFITS
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- TITLE 41. PUBLIC CONTRACTS
- TITLE 42. THE PUBLIC HEALTH AND WELFARE
- TITLE 43. PUBLIC LANDS

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